

CLAIMS

1. Fertilizer formulations comprising:
 - I) a monobasic earth-alkali metal phosphate, chosen from among Calcium Phosphate (MCP) $\text{Ca}(\text{H}_2\text{PO}_4)_2$, Magnesium Phosphate (MMgP) $\text{Mg}(\text{H}_2\text{PO}_4)_2$, or mixtures thereof;
 - II) an alkali metal phosphate (MALP) AH_2PO_4 ;
 - III) Phosphoric Acid (PA) H_3PO_4 .
2. Fertilizer formulations according to claim 1, wherein the alkali metal phosphate MALP is Monopotassium Phosphate (MKP) KH_2PO_4 .
3. Fertilizer formulations according to claim 1 or 2, wherein a) the alkali metal phosphate MALP is in a molar ratio to PA that is at least the ratio corresponding to the double salt $\text{AH}_5(\text{PO}_4)_2$.
4. Fertilizer formulations according to claim 1, wherein the ratio $\text{A}_2\text{O}:\text{P}_2\text{O}_5$, wherein the P_2O_5 does not comprise that included in phosphate moieties of the earth-alkali metal phosphates, is from about 0.50 to about 0.80.
5. Fertilizer formulations according to claim 1, wherein the molar ratio CaO and/or MgO to $\text{P}_2\text{O}_5\text{T}$, wherein $\text{P}_2\text{O}_5\text{T}$ comprises the total amount included in the formulations, is from 1:4.5 to 1:15.1 if the earth-alkali metal is calcium, and from 1:3.3 to 1:7.5, if the earth-alkali metal is magnesium.
6. Fertilizer formulations according to claim 5, wherein the molar ratio CaO and/or MgO to $\text{P}_2\text{O}_5\text{T}$, wherein the $\text{P}_2\text{O}_5\text{T}$ comprises the total amount included in the formulations, is about 1:4.8 if the earth-alkali metal is calcium, and about 1:3.8, if the earth-alkali metal is magnesium.

7. Fertilizer compositions comprising:
a monobasic earth-alkali metal phosphate, chosen from among Calcium Phosphate (MCP) $\text{Ca}(\text{H}_2\text{PO}_4)_2$, Magnesium Phosphate (MMgP) $\text{Mg}(\text{H}_2\text{PO}_4)_2$, or mixtures thereof, and an alkali metal double salt $\text{AH}_5(\text{PO}_4)_2$, wherein $\text{A}=\text{K}, \text{Na}, \text{NH}_4$.
8. Fertilizer compositions according to claim 7, further comprising an alkali metal phosphate (MALP) AH_2PO_4 .
9. Fertilizer compositions according to claim 7, wherein the alkali metal double salt is $\text{KH}_5(\text{PO}_4)_2$.
10. Fertilizer compositions according to claim 8, wherein the alkali metal phosphate MALP is Monopotassium Phosphate (MKP) KH_2PO_4 .
11. Fertilizer compositions according to claim 7, 8 or 9, wherein the molar ratio of CaO and/or MgO to $\text{P}_2\text{O}_5\text{T}$, wherein the $\text{P}_2\text{O}_5\text{T}$ comprises the total amount included in the compositions, is from 1:4.5 to 1:15.1 if the earth-alkali metal is calcium, and from 1:3.3 to 1:7.5, if the earth-alkali metal is magnesium.
12. Fertilizer compositions according to claim 11, wherein the molar ratio CaO and/or MgO to $\text{P}_2\text{O}_5\text{T}$, wherein the $\text{P}_2\text{O}_5\text{T}$ comprises the total amount included in the compositions, is about 1:4.8 if the earth-alkali metal is calcium, and is about 1:3.8, if the earth-alkali metal is magnesium.
13. Fertilizer compositions according to claim 11, wherein the molar ratio of MALP to $\text{AH}_5(\text{PO}_4)_2$ is from zero to 60%.

14. Process for the preparation of the compositions of the invention, which comprises the steps of preparing a formulation according to any one of claims 1 to 6; introducing said formulation into a drying oven of a material resistant to the components of said formulation (particularly to the PA); and mechanically homogenizing said formulation while concurrently drying it by heating under a vacuum.